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Editorial

Key approaches to nosocomial infection control

Antibiotic resistance has become a global problem. Clones of bacteria with multidrug resistance (MDR) to important antibiotics including penicillins, cephamycins, carbapenems, aminoglycosides, and fluoroquinolones are increasing under the pressure of excessive and inappropriate antibiotic use with opportunities for global spread of MDR strains [1, 2]. The burden of healthcare-associated infections such as pneumonia, surgical site infections, gastrointestinal, urinary tract, and primary bloodstream infections have been a serious problem arising in part from inappropriate antibiotic use, complicated by device-associated infections (i.e. ventilator-associated pneumonia, catheter-related urinary tract infection, and catheter-related bloodstream infection) [3]. The health care problems associated with infections has posed not only additional morbidity and mortality for patients, but is also associated with significant financial costs [4].

Isolation precautions, environmental cleanliness, and surveillance are standard measures for hospital infection control. Systems of isolation precautions for infection control have been proposed [5]. Standard (universal) precautions recommended for all patients include hand washing before and after every patient contact, cough etiquette, glove, gown, and eye protection as required, and safe disposal of sharp instruments in impervious containers [5]. Contact precautions are needed for health care workers when dealing with patients with bacterial colonization of body sites, enteric infections, scabies, impetigo, and decubitus ulcers. Precautions are also required for patients with suspected possibility of transmission of droplet transmission diseases such as *Mycoplasma* pneumonia, diphtheria, and *Neisseria* meningitidis [5]. Healthcare workers for these patients should wear a facemask (use of higher level respirator masks is not required [5]. The doors of rooms used to house these patients may remain open [5]. Precautions against airborne infection of diseases such as Ebola, SARS, and tuberculosis are also essential. These patients should be admitted to an airborne infection isolation room, such as a private room with negative air pressure [5]. Doors to the isolation rooms must remain closed. Healthcare providers and other persons entering must wear a respirator with a filtering capacity of 95% that allows a tight seal over the nose and mouth [5]. There are guidelines for sterilization and disinfection processes and products for infection control by device classification [6].

Environmental cleaning is a major component of infection control programs. Environmental cleaning, disinfection, and sterilization are basic and important measures used to avoid hospital acquired infections by reducing contact with medical equipment and contaminated surfaces by healthcare personnel, patients, and their relatives [7, 8].

In addition to standard precautions, contact precautions and environmental cleaning, surveillance for nosocomial infection is an important cornerstone of hospital infection control [9, 10]. Avcioglu and Bilkay in this issue proposed yet another method that can be used in surveillance. They suggested that antibiotyping and antibiotype profiles may provide valuable information regarding hospitalized patients that could identify problems areas and allow evidence-based approaches to preventive measures against emergence of new drug resistant nosocomial infection [11]. The utility of the methods warrants further exploration.

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